

Claims

1. An arrangement for the ascent and/or descent of one or a plurality of persons on an object, characterized by at least one longitudinally extended rail-like profile (1, 1', 1'') having at least one guide component (41, 43, 103, 105, 204, 206, 208, 210, 253, 255) extending along the profile and a component for the accommodation of force transmission (9, 11, 42, 44, 109) onto the profile and/or guide component, and by a climbing aid having at least one climbing console (13, 15) having at least one platform or seat (25, 27) as well as a personal safety device and/or a handle (21, 23), as well as at least one force-transmitting element (17, 19, 45, 47, 117, 119, 217, 219, 261, 263) engaging in or on the force-transmitting component and/or profile and/or a drive (113, 123, 302, 306), as well as a device (22, 24, 71, 72, 73, 141, 143) holding the element or drive in or on the at least one guide component and/or profile.

2. The arrangement according to Claim 1, characterized in that the at least one guide component and/or the force-transmitting component is formed by at least one rack-like or grid-like longitudinal guide.

3. The arrangement according to one of Claims 1 or 2, characterized in that the climbing aid has at least one climbing console (13, 15), preferably two, having at least one force-transmitting element and/or

drive, as well as at least one holding device for holding the force-transmitting element or drive in or on the guide component and/or force-transmitting component.

4. The arrangement according to one of Claims 1 to 3, characterized in that the at least one rotating force-transmitting element engaging in or on the longitudinal guide component(s) and/or the force-transmitting component is a pinion.

5. The arrangement according to one of Claims 1 to 4, characterized in that the climbing console is longitudinally extended with a handle arranged at the top end in the direction of ascent and a platform arranged at the downward end.

6. The arrangement according to one of Claims 1 to 5, characterized in that the force-transmitting element engaging in or on the at least one guide component and/or force-transmitting component or the drive is blockable at least in the downward direction and preferably remains free to rotate or slide in the direction of ascent.

7. The arrangement according to one of Claims 1 to 6, characterized in that the element engaging in or on the at least one guide component and/or force-transmitting component or the drive is damped and/or operatively connected to another suitable motion-damping or motion-inhibiting means, such as an eddy-current brake, centrifugal brake, or linear brake system, that is, that free mobility of the respective climbing console is not possible in the downward direction or

the direction downward.

8. The arrangement according to one of Claims 1 to 7, characterized in that means for releasing brakes (61, 63) are arranged in the region of the handles for the actuation of the downward unblocking of the force-transmitting element or drive, in order to make possible a damped downward motion of the climbing console or climbing consoles with simultaneous activation of the rotation or damping elements.

9. The arrangement according to one of Claims 1 to 8, characterized in that a retaining apparatus, such as for example a safety belt or harness (85), is arranged on at least one of the at least two climbing consoles for securing the person using the climbing aid.

10. The arrangement according to one of Claims 1 to 9, characterized in that the longitudinally extended rail-like profile is fastenable to an object or loosely mobile.

11. The arrangement according to one of Claims 1 to 10, characterized in that at least one force-transmitting element is both blockable with brakes and also rotationally or linearly damped.

12. The arrangement according to one of Claims 1 to 11, characterized in that along the longitudinally extended profile and at least approximately transversely to the longitudinal extension of the profile there are arranged retaining bars provided, for example, for the suspension of auxiliary ladders.

13. The arrangement according to one of Claims 1 to 12, characterized in that the force-transmitting elements are provided with a drive, such as for example an electric motor, an internal combustion engine, a linear motor, etc.

14. The arrangement according to one of Claims 1 to 13, characterized in that the force-transmitting elements are each connected to a drive motor, via gears as appropriate, in such fashion that each drive motor is provided in order to drive preferably at least the dead weight of the climbing console in question or of the arrangement as a whole upward upon activation.

15. The arrangement according to one of Claims 13 or 14, characterized in that the drive motor is actuatably operatively connected to the platform, the seat, and/or the handle so that the drive motor can be activated or deactivated for example by unloading the platform or seat or by actuation of the handle or by electronic control.

16. The arrangement according to one of Claims 13 to 15, characterized in that the drive motor is additionally equipped as a generator in order to recover current during downward movement of the arrangement in order to feed for example a battery or rechargeable battery pack or a so-called Supercap (SCAP).

17. A method for the ascent and/or descent of a person on an object using an arrangement according to one of Claims 1 to 16, characterized in that the person can ascend and/or descend along a longitudinally extended rail-like profile

on the object using a climbing aid in such fashion that the climbing aid is provided with force-transmitting elements engaging in or on the rail-like profile and/or a drive, the person being able to unblock the force-transmitting elements or drive while descending, and descent taking place in damped fashion by connecting the force-transmitting elements or the drive to a rotary dashpot, an eddy current brake, centrifugal brake, linear motor or the like.

18. The method according to Claim 17, characterized in that the climbing aid is fashioned in two parts and the person using the climbing aid first ascends using one console by rendering the force-transmitting elements or the drive free in the climbing direction while blocking the force-transmitting elements on the other console in order to prevent downward sliding of the other console; and that, after negotiating a certain climbing height, the person ascends with the other console by blocking the force-transmitting elements or the drive on the one console.

19. The method according to one of Claims 17 or 18, characterized in that for the descent of a person using the climbing aid, the blocking of the force-transmitting elements or drive is unblocked and descent takes place in controlled or damped fashion.

20. A method for the ascent and/or descent of a person on an object using an arrangement according to one of

Claims 1 to 16, characterized in that the person can ascend and/or descend along a longitudinally extended rail-like profile on the object using a climbing aid in such fashion that by actuating a drive motor on either of the two consoles of the climbing aid, this drive motor drives at least the dead weight of the respective climbing aid negotiatingly upward, actuation being able to take place either automatically by unloading of the respective platform or seat or, however, by actuation of a corresponding control on the respective handle, and that after the negotiation of a certain climbing height, the drive motor is deactivated and the drive motor on the other climbing aid is activated, for example automatically, in order to drive the other climbing aid correspondingly upward.

21. The method according to Claim 20, characterized in that the drive motors are activated or deactivated automatically in that, for example on unloading of the platform or seat, the respective drive motor, such as for example a battery-driven electric motor, is activated while the other drive motor remains deactivated automatically by loading of the platform or seat or under electronic control.

22. The method according to one of Claims 20 or 21, characterized in that in the descent of a person using the arrangement according to the invention, the drive motors are operated in the manner of generators for generating current and for example a battery, such as for example a rechargeable battery pack or a Supercap (CAP), can be fed with the current generated.

23. The use of the arrangement according to one of Claims 1 to 16 for the climbing of high-voltage poles, cableway masts, silos, building walls, shaft walls, etc.

24. The use of the arrangement according to one of Claims 1 to 16 as a rescue device or as a fire ladder in the case of tall buildings.

25. The use of the arrangement according to one of Claims 1 to 16 as a self-contained person lift.

26. A rail-like profile (1, 1', 1'') for an arrangement according to one of Claims 1 to 16, characterized by at least one guide component (41, 43, 103, 105, 204, 206, 208, 210, 253, 255) extending along the profile as well as a component (9, 11, 42, 44, 109) for accepting force transmission onto the profile and/or guide component.

27. The rail-like profile according to Claim 26, characterized in that the at least one guide component and/or the force-transmitting component is formed by at least one rack-like or grid-like longitudinal guide.

28. The use of the rail-like profile according to one of Claims 26 or 27 as guide for a climbing aid on an outer façade of a high-rise building, on a high-voltage pole, on a cableway mast, on silos, on shaft walls, etc.

29. The use of the rail-like profile according to one of Claims 26 or 27 for the guidance of rescue devices on tall buildings.

THIS PAGE BLANK (USPTO)